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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/803,221

03/18/2004

Shigenori Ito

811_045

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25191

7590

02/19/2008

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EXAMINER

CREPEAU, JONATHAN

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

02/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/803,221	Applicant(s) ITO ET AL.	
	Examiner Jonathan S. Crepeau	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/19/07 1/24/08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-3 and 34. Claim 34 remains allowed. Applicants' amendments have obviated the rejection over JP '913. However, claims 1-3 are newly rejected under 35 USC 103 as necessitated by amendment. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/49485 in view of Tannenberger et al (U.S. Patent 5,328,779).

WO '485 is directed to planar solid oxide fuel cell comprising a laminated sintered body comprising a fuel electrode (10) made of nickel-YSZ cermet and a dense electrolyte (12) made of YSZ (see Figure 2; page 8, line 13). The fuel electrode (10) in combination with an edge strip (16) is a "self-supporting ceramic substrate consisting of a ceramic porous body," as recited in claim 1. The thickness of the fuel electrode is 0.5-1.0 mm, and the thickness of the electrolyte is 10-50 microns, for example about 20 microns (see page 8, line 5 et seq.). The electrolyte contacts an entire main surface of the ceramic substrate, as shown in Figure 2. An air electrode comprising Sr-doped lanthanum manganite is subsequently screen-printed onto the other side of the electrolyte. Regarding the limitation in claim 1 that the top electrode is "laminated" on the dense body (electrolyte), this limitation is considered to be a product-by-process limitation that

does not produce a structure distinguishable from that of the reference (MPEP 2113). Regarding claim 3, this claim is also considered to be product-by-process claim that does not produce a structure distinguishable from that of the reference.

WO '485 does not expressly teach that the laminated sintered body has an area of 60 square centimeters as recited in claim 2, or that the ceramic dense body (electrolyte) contacts an entire main surface of the air electrode, as recited in claim 1.

However, the recitation of an absolute size (surface area) of the sintered body is not considered to distinguish over the reference. Generally, an artisan would be able to scale up or down the size of an apparatus depending on its intended use, among other factors. See MPEP 2144.04.

Further, the artisan would be motivated to deposit the cathode layer such that the electrolyte contacts an entire main surface of the cathode, as recited in claim 1. The artisan would be motivated to make the components the same size to maximize surface contact area while minimizing material used, and as such the above-noted recitation in claim 1 would be rendered obvious.

WO '485 further does not expressly teach the claimed helium leakage rate of the zirconia electrolyte layer as recited in claim 1.

Tannenberger et al. is directed to a fuel cell comprising an electrolyte layer (2) comprising YSZ. The electrolyte layer a helium leakage rate of 10^{-6} mbar.l/cm.s (see col. 6, line 20).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use a YSZ electrolyte in the fuel cell of WO '485 having the helium leakage rate disclosed by Tannenberger et al. In column 4, line 16, Tannenberger et al. disclose that "advantageously, the electrolyte layer produced by the process according to the invention has a layer thickness optimized for the oxygen ion conductivity and simultaneously the necessary gastightness." As such, the artisan would be motivated to use a YSZ electrolyte in the fuel cell of WO '485 having the helium leakage rate disclosed by Tannenberger et al. Although the units of the helium leakage rate disclosed by Tannenberger et al. are slightly different than the units recited in the instant claims, it is submitted that the disclosure of Tannenberger at least identifies the helium leakage rate as a result effective variable which may be optimized by the skilled artisan as stated above. Further, it is submitted that, absent evidence to the contrary, there would be a reasonable expectation that the range disclosed by the reference and the claimed range overlap. It is noted that the Tannenberger reference does not explicitly state how its helium leakage rate is measured, whereas the instant application discloses a specific method in [0124].

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 1795

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jonathan Crepeau/
Primary Examiner
Art Unit 1795
February 20, 2008